Data Science (Big Data/Data Science)

Completed Technology Project (2013 - 2017)

Project Introduction

Develop novel architectures, technologies, and methodologies to address the analysis, fusion and automated extraction of data from massive, distributed archives and data sets in both science and non-NASA applications.

Data Science is emerging as a critical area of research and technology to advance scientific discovery, knowledge and decision making through systematic computational approaches to analyzing massive data sets. The sheer volume of data increase, coupled with the highly distributed and heterogeneous nature of scientific data sets, is requiring new approaches for managing, analyzing and understanding data. The technology effort is focused on developing new software architectures, software tools, and computational methodologies which can improve the performance and automate the extraction of key features, anomalies and patterns in the data to support the big data challenges emerging from observational instruments and systems.

Anticipated Benefits

Provide new approaches to addressing the big data challenge in observational systems including support for engineering, operations, and science.

Support emerging capabilities in high volume, complex instruments; support new science goals, particularly those that require the integration and analysis of data across instruments and measurements.

A scalable approach to addressing high volume, data intensive observing systems which can incorporate commercial-based space systems, instruments and other capabilities.

Directly applicable to other government agencies needing new capabilities and approaches to address data intensive challenges in observational instruments, sensors, etc. that need to consider an end-to-end approach to address data analytics.

Data Science

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Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Independent Research & Development: JPL IRAD

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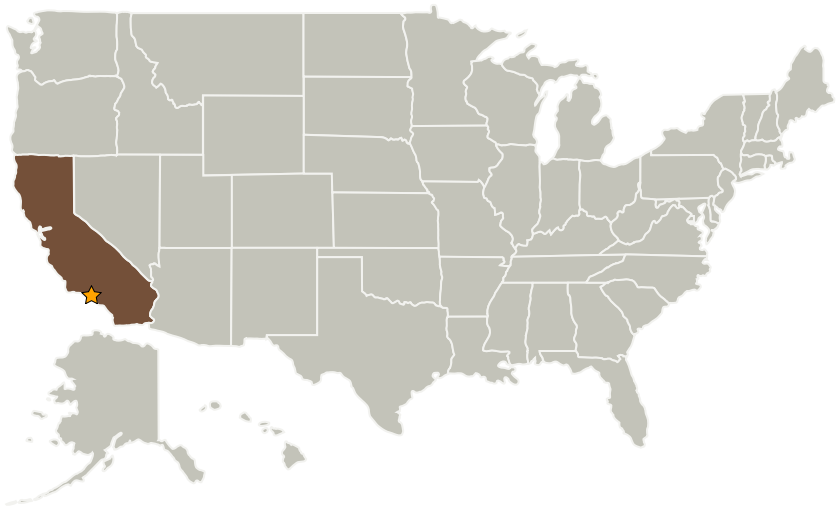
Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California

Project Management

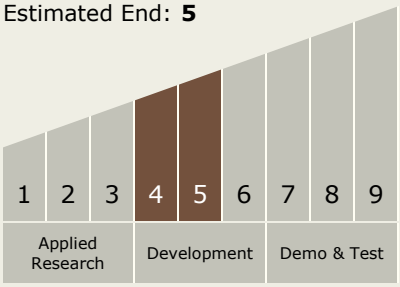
Program Manager:
Fred Y Hadaegh

Project Manager:
Jonas Zmuidzinas

Principal Investigator:
Daniel J Crichton

Technology Maturity (TRL)

Start: **4**
Estimated End: **5**



Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.4 Information Processing
    - TX11.4.2 Intelligent Data Understanding